

- 6.2 Try to walkthrough the following program and write down the expected results. Key-in the program and compare the results after execution. This program helps you to understand the function of exchanging the values of two variables and the concepts of *pass-by-value* and *pass-by-reference*.

```
/* This program shows the difference between pass by value
and pass by reference*/

#include <stdio.h>
void Exchange1 (int x, int y);
void Exchange2 (int *x, int *y);
int A, B, Temp;

int main (void)
{

    printf("\nStart program.");
    printf("\n");
    A = 1;
    B = 2;
    Temp = 3;
    printf("\nt%d\t%d\t%d", A, B, Temp);
    Exchange1(A, B);
    printf("\nt%d\t%d\t%d", A, B, Temp);
    Exchange2(&A, &B);
    printf("\nt%d\t%d\t%d", A, B, Temp);
    Exchange2(&A, &B);
    printf("\nt%d\t%d\t%d", A, B, Temp);
    printf("\n");
    printf("\nEnd program.");
    printf("\n");
    return 0;
}

void Exchange1 (int x, int y)
{
    int Temp;

    Temp = x;
    x = 2 * y;
    y = 2 * Temp;
    return;
}

void Exchange2 (int *x, int *y)
{
    int Temp;

    Temp = *x;
    *x = 2 * (*y);
    *y = 2 * Temp;
    printf("\nt%d\t%d\t%d", A, B, Temp);
    return;
}
```

**Sample running:**

Start program.